

What is claimed is:

1. An absolute humidity sensor comprising:

a silicon substrate;

5 a humidity sensing element formed on a substrate, for detecting humidity exposed to the air, having a variable resistance value depending on the amount of the detected humidity;

a temperature compensating element formed on the semiconductor, for compensating for the resistance value of the humidity sensing element; and

10 a passivation film covered on the temperature compensating element, for shielding the humidity exposed to the air so as not to vary the resistance value of the temperature compensating element.

15 2. The absolute humidity sensor of claim 1, wherein the humidity sensing element and the temperature compensating element include:

an insulating film formed on the substrate;

a humidity sensing film formed on the insulating film, for absorbing the humidity; and

20 an electrode formed below the humidity sensing film or over/below the humidity sensing film.

3. The absolute humidity sensor of claim 2, wherein the insulating film is formed of any one of SiO_2 , Si_3N_4 , and SiO_xN_y .

4. The absolute humidity sensor of claim 2, wherein the humidity sensing film is formed of polyimide.

5 5. The absolute humidity sensor of claim 2, wherein the electrode has a comb shape.

6. The absolute humidity sensor of claim 2, wherein the electrode formed only over the humidity sensing film has a comb shape.

10 7. The absolute humidity sensor of claim 1, wherein the passivation film is formed of any one of SiO_2 , Si_3N_4 , and SiO_xN_y .

15 8. The absolute humidity sensor of claim 1, further comprising:
a printed circuit board joined with a lower portion of the silicon substrate;

a wire for electrically connecting electrodes of the humidity sensing element and the temperature compensating element with electrodes of the printed circuit board; and

20 a metal shield case formed over the printed circuit board to cover an entire surface of the printed circuit board including the humidity sensing element and the temperature compensating element.

25 9. The absolute humidity sensor of claim 8, wherein the metal shield case has a hole for propagation of external humidity.